

Scientific Inquiry

1-1 The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation.

1-1.2 Use tools (including rulers) safely, accurately, and appropriately when gathering specific data.

Taxonomy Level: 3.2-B Apply Conceptual Knowledge

Previous/Future knowledge: In kindergarten (K-1.2), students used magnifiers and eyedroppers to safely, accurately and appropriately to gather data. In future grades, students will continue to use these tools, when appropriate, as well as use new tools when collecting scientific data. A complete list of tools can be found in Appendix A of the Academic Standards.

It is essential for students to know that every simple scientific investigation provides information. This information is called *data*. Data can be simple observations or numbers.

It is essential for students to know that different tools are needed to collect different kinds of data.

- A *ruler* is a measurement tool that can be used to measure the length, width, or height of an object or the distance between two objects.
 - When using a ruler, make sure to begin measuring from the zero (0) mark, not necessarily the edge of the ruler.
 - Ruler measurements should be made to the nearest whole inch (in).

It is essential for students to use care when handling rulers when gathering data.

- Some rulers may have a sharp, metal edge on them.
- Care should be taken not to break the ruler.

It is also essential for students to use tools from previous grade levels that are appropriate to the content of this grade level, such as eyedroppers or magnifiers, to gather data.

NOTE TO TEACHER: See previous grade information regarding how to use each tool.

It is not essential for students to use other measuring tools at this time such as meter sticks, meter tapes, or yardsticks. However, an introduction to other appropriate tools is acceptable if relevant to instruction.

Assessment Guidelines:

The objective of this indicator is to *use* tools safely, accurately, and appropriately when gathering data; therefore, the primary focus of assessment should be to apply correct procedures to the use of rulers and other tools essential to the grade level that would be needed to conduct a science investigation. However, appropriate assessments should also require students to *identify* appropriate uses for magnifiers and eyedroppers; *illustrate* the appropriate tool for an investigation using pictures, diagrams, or words; *recall* how to accurately determine the measurement from the tool; or *recognize* ways to use science tools safely, accurately, and appropriately.